

Notice of Allowability

Application No.

10/082,867

Examiner

Carlos Lopez

Applicant(s)

BILLIET ET AL.

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/14/06 and 3/27/06.
2. ☒ The allowed claim(s) is/are 3,5-6,11,19-29.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 2-18-02
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 3/27/06
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Power of Attorney.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

The title was amended to read as follows:

~~Ultrasmall semiconductor bonding tools and method of fabrication thereof~~

Method of Making Semiconductor Bonding Tools

The claims have been amended to read as follows:

21. (Currently Amended) The method of claim 19, wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or blanks and sintering the thus obtained organic-free preforms into dense end products of reduced dimensions results in dense end products comprising tools for semiconductor wire bonding that respectively include at least one borehole having final dimensions including a final diameter such that bonding wire for bonding semiconductor wires may pass during bonding, and wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or blanks and sintering the thus obtained organic-free ~~performs~~ **preforms** into dense end products of reduced dimensions includes obtaining the final dimensions including the final diameter of the at least one borehole during sintering.

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22. (Currently Amended) The method of claim 21, wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or blanks and sintering the thus obtained organic-free ~~performs~~ preforms into dense end products of reduced dimensions includes obtaining a final diameter of about 10 micrometers for the at least one borehole during sintering.

23. (Currently Amended) The method of claim 21, wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or blanks and sintering the thus obtained organic-free ~~performs~~ preforms into dense end products of reduced dimensions includes obtaining a final diameter of about 13 micrometers for the at least one borehole during sintering.

24. (Currently Amended) The method of claim 21, wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or blanks and sintering the thus obtained organic-free ~~performs~~ preforms into dense end products of reduced dimensions includes obtaining a final diameter of about 8 micrometers for the at least one borehole during sintering.

27. (Currently Amended) The method of claim 25, wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or blanks and sintering the thus obtained organic-free ~~performs~~ preforms into dense end products of reduced dimensions includes obtaining a final diameter of about 10 micrometers for the at least one borehole during sintering.

28. (Currently Amended) The method of claim 25, wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or

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blanks and sintering the thus obtained organic-free ~~performs~~ preforms into dense end products of reduced dimensions includes obtaining a final diameter of about 13 micrometers for the at least one borehole during sintering.

29. (Currently Amended) The method of claim 25, wherein the action of extracting substantially all of the organic thermoplastic material from said green tools or blanks and sintering the thus obtained organic-free ~~performs~~ preforms into dense end products of reduced dimensions includes obtaining a final diameter of about 8 micrometers for the at least one borehole during sintering.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: the primary reason for allowance is that the cited prior art fails to disclose or reasonably suggest a method of producing tools or blanks wherein the action of extracting substantially all of the organic thermoplastic material from green tools or blanks and sintering an obtained organic-free preform into dense end products of reduced dimension results in end products comprising tools for semiconductor wire bonding that respectively include at least one borehole having final dimensions such that bonding wire for bonding semiconductor wires may pass during bonding and wherein the action of extracting substantially all of the organic thermoplastic material from the green tools or blanks and sintering the thus obtained organic-free preforms into dense end products of reduced dimensions includes obtaining the final dimensions of the at least one borehole during sintering.

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The cited prior art such as US 4,667,867, Col. 1, lines 50ff and US 6,729,527, Col.3 lines 10ff, disclose of providing a borehole by grinding or machining.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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